Conservation Division
P. O. Box 1716
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May 7, 1979

Memorandum

To: Area Mining Supervisor, SRMA

From: Mining Engineer, SRMA

Subject: Field inspection of underground uranium mining operations at the Jackpile-Paguate Mine, The Anaconda Company, Laguna Leases 1 and 4, Laguna Indian Reservation, T10 and 11N, R5W, Valencia County, New Mexico

The writer inspected the subject mining operations April 3, 1979, in the company of John Rhodes, Mining Engineer with the BIA, and Art Richardson of Anaconda. The purpose of the inspection was the examination of the operations conducted since the last inspection of November 1, 1978. However, this examination was rather general in nature in order to adequately introduce Mr. Rhodes to the underground mining activities.

The P-10 area of the P-10 Mine was inspected first to show Mr. Rhodes conventional development and extraction of the uranium ore zones in the Jackpile Sandstone, a unit of the Brushy Basin Member of the Jurassic Morrison Formation. Sublevel development in the 2200 track haulage drift (TD) was examined to illustrate the method used to access the ore zones for stope, or ore level, development. The 2200 TD is being driven by conventional means under ore zones delineated by surface drilling in the southern portion of the P-10 Mine, and the drift crew was completing mucking of a drift round and preparing to install split-set rock bolts and wire mesh for ground control. The installation of orepasses and manways between the haulage and ore levels was pointed out to Mr. Rhodes at this time.

The main line 200 TD was also examined in the area of the 205 stope. This area is somewhat unique in that mineable ore occurs immediately above and at the same elevation as the track drift. The upper ore has been partially developed using a chinaman chute and slushers, but further development was stopped to avoid traffic conflicts in the main line haulage. Mr. Richardson noted that the haulage level ore zones would be recovered when retreating from this portion of the mine after extraction of all upper ore zones is complete.

The 2202 stope in the P-10 area was examined to illustrate conventional pillar development and extraction with slushers. Mr. Richardson pointed out that although pillar development is normally accomplished with only one slusher, a double slusher arrangement is being utilized in this particular stope. Mr. Richardson also noted that Anaconda is now driving pillar development crosscuts on 25-foot centers resulting in pillars approximately 20 by 20 feet square. These smaller pillars (compared to past pillars varying from 30 to 45 feet square) can be recovered faster with better grade control because extraction can be conducted from both sides. Anaconda also tries to keep the development crosscuts at the bottom of the ore zones because excess ore in the back is easier to recover than that in the floor.

In the P-7 area of the P-10 Mine, LHD units are used for pillar development and extraction either by themselves or in conjunction with slushers. The 306 stope in the P-7 area was examined to illustrate this approach to Mr. Rhodes, Surface drilling on 100-foot centers indicated that the ore in the 306 stope occurred as two stacked lenses with 15 feet of vertical separation, and development therefore commenced on the basis of two separate stopes with LHD units in the upper zone and slushers in the bottom zone. As development progressed, Anaconda discovered that the 306 ore lenses actually joined between the surface boreholes to form one thick ore zone. All of the ore was therefore extracted with slushers from the lower development resulting in a "ballroom" open stope. Pillar extraction in the 306 stope was almost complete at the time of this inspection.

The 00-2 area of the P-10 Mine was not examined during this inspection but was discussed with Mr. Richardson. This area is of some interest because of its location 300 feet beneath State Highway 279 and because the involved isolated ore zones were scheduled to be mined through an adit (P-12A Adit Project) in the final highwall of SP-40 open-pit pushback. Anaconda has instead developed the ore zones from the P-10 decline and is mining the ore using a chinaman chute and direct haulage with diesel trucks from the chute through the decline to the

surface. According to Mr. Richardson, the 00-2 operations were stopped when development drifting in the north ore zone encountered waste. Additional surface drilling encountered ore so the 00-2 activities will resume in the near future. The south 00-2 ore zone has been mined out and yielded more ore than indicated by surface drilling.

At the present time, the P-10 Mine has a total of twenty-seven active working areas. Most of these areas are ore producing but track drift and raise development are also included. During the calendar year 1978, the P-10 operations produced 239,150 tons of ore ranging in grade from 0.08 to 0.33% U_3O_8, 7452 tons of waste, and 46,611 tons of protore (low grade material ranging from 0.03 to 0.09% U_3O_8). January 1979 production was 25,146 tons of ore averaging 0.17% U_3O_8, 1336 tons of waste and 656 tons of protore averaging 0.03% U_3O_8. February 1979 production was 23,919 tons of ore averaging 0.13% U_3O_8, 1260 tons of waste, and 2079 tons of protore averaging 0.03% U_3O_8. Categorized production figures for March 1979 had not yet been compiled but production from both the P-10 and PW2-PW3 operations totaled 21,846 tons of ore at 0.10% U_3O_8. Approximately 160 gallons of water per minute are being pumped continuously from the P-10 Mine to the P-10 holding pond in a mined out area of the Paguate Pit.

The P-15/17 Mine Project and the PW2-PW3 Adit Project were not examined during this inspection but were discussed with John Nelson, Chief Engineer of Anaconda. The P-15/17 Project was approved April 21, 1978, but operations have not yet commenced, reportedly due to lack of available capital. The PW2-PW3 Project is a small scram type operation for recovering remnant ore zones on the northwest edge of the mined out North Paguate Pit. The Project was approved January 11, 1978, and primary development has produced ore since May of that year. Pillar extraction has not yet begun. Anaconda presently has two mining crews working the PW2-PW3 Project as well as the company's new miner training school. The training school may soon be transferred to an area in the P-10 Mine because the PW2-PW3 Project is about 2 to 3 months behind and timely completion of the mining is necessary for backfilling of the North Paguate Pit. During the 1978 calendar year (May through December), the PW2-PW3 Project yielded 8625 tons of ore averaging 0.20% U_3O_8 and 299 tons of waste and protore. February 1979 production was 720 tons of ore averaging 0.14% U_3O_8 and 1035 tons of waste and protore.

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